#5

CTGCACTCTATTGGATGAAGAGTGTACATATTCATATAATTCTTAAAGTAGGCAGAAATTAAAG
GGGATGGAAATATATACTTGTACTGCCTTAGATAGTCACCAGGATGTTGTTACAGTCTTCGTTT
ACTGCTTCTGAAGCCTATACTGATAGAATTAATAAAATACTGAGAGAGAGAGAGAGGGACAGAG
AGAGAGAGGGGGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAAGA
GAAGAAAACAAGGTSAAGCCATCTGCTTAACTTATGTCCACATTCTCTCAAGAGCATTGTCCTA
TTTGTAGAATTATCTATATTGTTAAGAATCATCTCCATTGTTAAGATTTTGTGGGCTGGAGATC
CAGCTCTGTTGATAAAGTGCTTGCCTAACATGCATGAAGTCCTAGGTTCTATTCCCAAGGCTAC
ATAAAACCTTGTGTTGTGATGAATGCCTGTAATCCCAGTACGCAGCAAGGAGAGACAAGGAGGA
TCAGAAGCTTAAGGACATCATTTTGTACATAGTGAGTTTGAGGAAAGCTGAGGTTACATGGAAC
TCTCTCTCTCTCAAAAACAAAACAAAACAAAACAAAACCTTCTACTAATATTCTGGATTCTGTT
TGATTTTTAGGATCTCAAGAGCATGCTGACGTCATTTATGTGTTTCCATCAGATACAGACAGAG
ATCATAAACATTTAACTCATTGATTATATGTTGAGAGTTGTCCCTCAAGAACCAATGGCCAAAC
ATCCACTGAGGATACACGGAAGCTTAGAAAATCTCTAATTAAAATCCTGACATAATGGAAGTGC
TCACAAACCAGCCAACACCTAATAAAACCAGTGGCAAGAGCAACAACTCGGCATTTTTCTACTT
TGAATCCTGCCAACCCCCTTTTCTAGCCATACTCTTGCTACTCATAGCATATACTGTGATCCTA
ATCATGGGCATTTTTGGAAACCTCTCTCTTATCATCATCATCTTTAAGAAACAGAGAGAAGCTC
AAAATGTTACCAACATACTGATTGCCAACCTGTCCCTCTCTGACATCTTGGTGTGTGTCATGTG
CATCCCTTTTACGGTCATCTACACTCTGATGGACCACTGGGTATTTGGGAACACTATGTGTAAA
CTCACTTCCTACGTGCAAAGTGTCTCAGTTTCTGTGTCCATATTCTCCCTTGTGTTGATTGCTA
TTGAACGATATCAGCTGATTGTGAACCCCCGTGGCTGGAAACCCAGAGTAGCTCATGCCTATTG
GGGGATCATCTTGATTTGGCTCATTTCTCTGACATTGTCTATTCCCTTATTCCTGTCCTACCAC
CTCACCAATGAGCCCTTTCATAATCTCTCTGTCCCTACTGACATCTACACCCACCAGGTAGCTT
GTGTGGAGATTTGGCCTTCTAAACTGAACCAACTCCTCTTTTCTACATCATTATTTATGCTCCA
GTATTTTGTCCCTCTGGGTTTCATTCTTATCTGCTACCTGAAGATCGTTCTCTGCCTCCGAAAA
AGAACTAGGCAGGTGGACAGGAGAAAGGAAAATAAGAGCCGTCTCAATGAGAACAAGAGGGTAA
ATGTGATGTTGATTTCCATCGTAGTGACTTTTGGAGCCTGCTGGTTGCCCTTGAACATTTTCAA
TGTCATCTTCGACTGGTATCATGAGATGCTGATGAGCTGCCACCACGACCTGGTATTTGTAGTT
TGCCACTTGATTGCTATGGTTTCTACTTGCATAAATCCTCTCTTTTATGGATTTCTCAACAAAA
ACTTCCAGAAGGATCTAATGATGCTTATTCACCACTGTTGGTGTGGTGAACCTCAGGAAAGTTA
TGAAAATATTGCCATGTCTACTATGCACACAGATGAATCCAAGGGATCATTAAAACTGGCTCAC
ATACCAACAGGCATATAGAAACTGGTAAGCAAAATCAAAGCCCTTCTGTTATGAAAGAAAGAGA
AGAAATAGTATGGAATAGGGCAAGGTGCAGAGGAAGCCAGACTTAAACACATAATATCTTTGGG
CCCAGTTTTGCTTTAAGTTAAGCATGTCTACTCCATTCAGCCATAGAACACACAGAGATTTATC
CCTACCCTTTCTTTTTTTCCTTTGGAAGAATAATAACTTAAACAACCTAGACATCATTACTGAG
GAAGAGAACAAAAATGAGAGAGCATACAAGGACAGCAGAGATGTCTGGGGTACAAAATTCACGT
TATTCGCTGGAATAGCTAGAAAGTTATTAGTTGTGCTGCAG (SEQ ID NO:1)

**FIGURE 1**

underlined = deleted in targeting construct

[ ] = sequence flanking Neo insert in targeting construct

[CTGCAGTCTATTGGATGAAGAGTGTACATATTCATATAATTCTTAAAGTAGGCAGAAAT
TAAAGGGGATGGAAATATATACTTGTACTGCCTTAGATAGTCACCAGGATGTTGTTACAG
TCTTCGTTTACTGCTTCTGAAGCCTATACTGATAGAATTAATAAAATACTGAGAGAGAGA
GAGAGGGACAGAGAGAGAGAGGGGGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGA
GAGAGAGAGAGAGAAGAGAAGAAAACAAGGTSAAGCCATCTGCTTAACTTATGTCCACAT
TCTCTCAAGAGCATTGTCCTATTTGTAGAATTATCTATATTGTTAAGAATCATCTCCATT
GTTAAGATTTTGTGGGCTGGAGATCCAGCTCTGTTGATAAAGTGCTTGCCTAACATGCAT
GAAGTCCTAGGTTCTATTCCCAAGGCTACATAAAACCTTGTGTTGTGATGAATGCCTGTA
ATCCCAGTACGCAGCAAGGAGAGACAAGGAGGATCAGAAGCTTAAGGACATCATTTTGTA
CATAGTGAGTTTGAGGAAAGCTGAGGTTACATGGAACTCTCTCTCTCTCAAAAACAAAAC
AAAACAAAACAAAACCTTCTACTAATATTCTGGATTCTGTTTGATTTTTAGGATCTCAAG
AGCATGCTGACGTCATTTATGTGTTTCCATCAGATACAGACAGAGATCATAAACATTTAA
CTCATTGATTATATGTTGAGAGTTGTCCCTCAAGAACCAATGGCCAAACATCCACTGAGG
ATACACGGAAGCTTAGAAAATCTCTAATTAAAATCCTGACATAATGGAAGTGCTCACAAA
CCAGCC]AACACCTAATAAAACCAGTGGCAAGAGCAACAACTCGGCATTTTTCTACTTTG
AATCCTGCCAACCCCCTTTTCTAGCCATACTCTTGCTACTCATAGCATATACTGTGATCC
TAATCATGGGCATTTTTGGAAACCTCTCTCTTATCATCATCATCTTTAAGAAACAGAGAG
AAGCTCAAAATGTTACCAACATACTGATT[GCCAACCTGTCCCTCTCTGACATCTTGGTG
TGTGTCATGTGCATCCCTTTTACGCTCATCTACACTCTGATGGACCACTGGGTATTTGGG
AACACTATGTGTAAACTCACTTCCTACGTGCAAAGTGTCTCAGTTTCTGTGTCCATATTC
TCCCTTGTGTTGATTGCTATTGAACGATATCAGCTGATTGTGAACCCCCGTGGCTGGAAA
CCCAGAGTAGCTCATGCCTATTGGGGGATCATCTTGATTTGGCTCATTTCTCTGACATTG
TCTATTCCCTTATTCCTGTCCTACCACCTCACCAATGAGCCCTTTCATAATCTCTCTCTC
CCTACTGACATCTACACCCACCAGGTAGCTTGTGTGGAGATTTGGCCTTCTAAACTGAAC
CAACTCCTCTTTTCTACATCATTATTTATGCTCCAGTATTTTGTCCCTCTGGGTTTCATT
CTTATCTGCTACCTGAAGATCGTTCTCTGCCTCCGAAAAAGAACTAGGCAGGTGGACAGG
AGAAAGGAAAATAAGAGCCGTCTCAATGAGAACAAGAGGGTAAATGTGATGTTGATTTCC
ATCGTAGTGACTTTTGGAGCCTGCTGGTTGCCCTTGAACATTTTCAATGTCATCTTCGAC
TGGTATCATGAGATGCTGATGAGCTGCCACCACGACCTGGTATTTGTAGTTTGCCACTTG
ATTGCTATGGTTTCTACTTGCATAAATCCTCTCTTTTATGGATTTCTCAACAAAAACTTC
CAGAAG]GATCTAATGATGCTTATTCACCACTGTTGGTGTGGTGAACCTCAGGAAAGTTA
TGAAAATATTGCCATGTCTACTATGCACACAGATGAATCCAAGGGATCATTAAAACTGGC
TCACATACCAACAGGCATATAGAAACTGGTAAGCAAAATCAAAGCCCTTCTGTTATGAAA
GAAAGAGAAGAAATAGTATGGAATAGGGCAAGGTGCAGAGGAAGCCAGACTTAAACACAT
AATATCTTTGGGCCCAGTTTTGCTTTAAGTTAAGCATGTCTACTCCATTCAGCCATAGAA
CACACAGAGATTTATCCCTACCCTTTCTTTTTTTCCTTTGGAAGAATAATAACTTAAACA
ACCTAGACATCATTACTGAGGAAGAGAACAAAAATGAGAGAGCATACAAGGACAGCAGAG
ATGTCTGGGGTACAAAATTCACGTTATTCGCTGGAATAGCTAGAAAGTTATTAGTTGTGC
TGCAG

**FIGURE 2A**

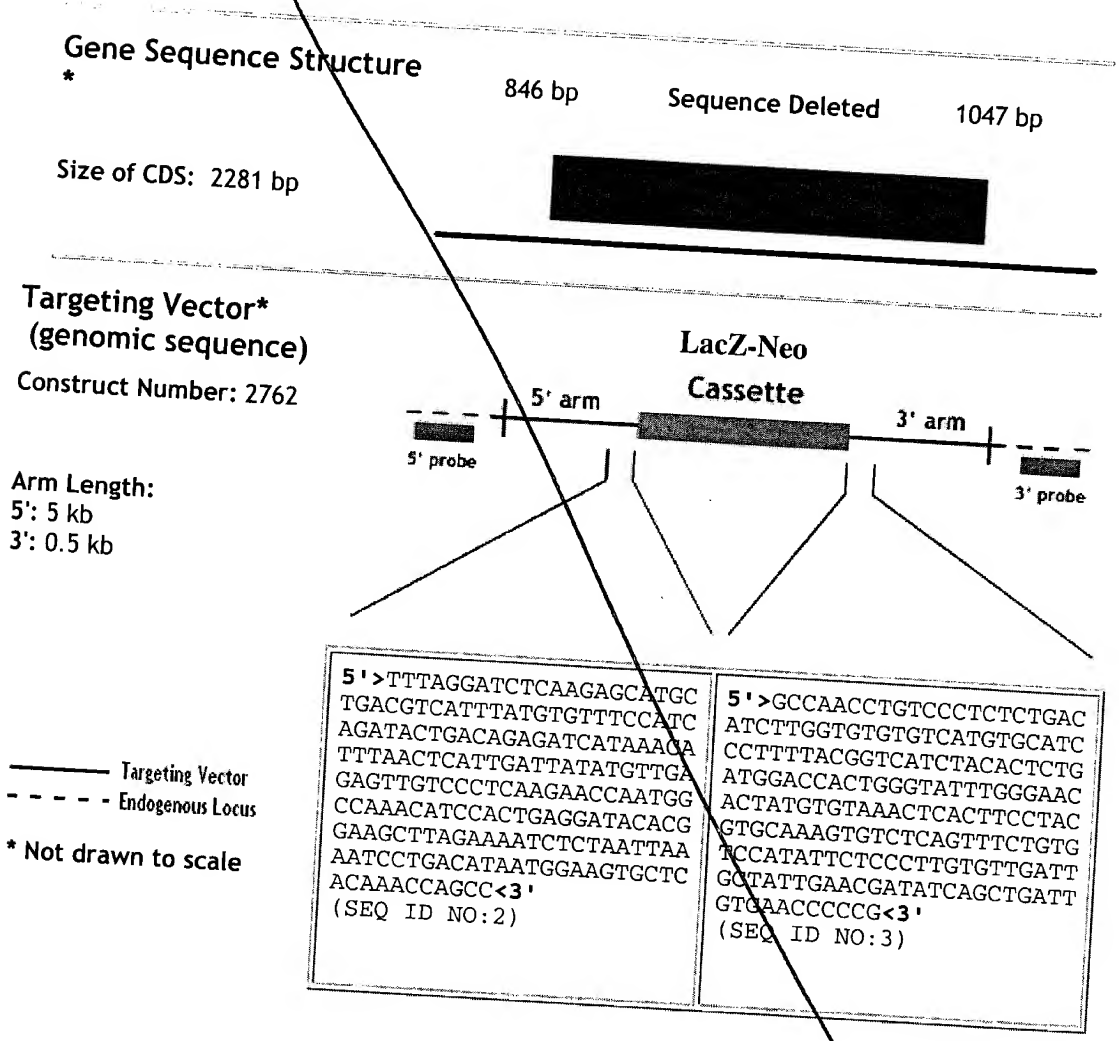
Gene Sequence Structure
*
846 bp
Sequence Deleted
1047 bp
Size of CDS: 2281 bp
Targeting Vector*
(genomic sequence)
Construct Number: 2762
LacZ-Neo
Cassette
5' arm
3' arm
5' probe
3' probe
Arm Length:
5': 5 kb
3': 0.5 kb
Targeting Vector
Endogenous Locus
* Not drawn to scale
5'>TTTAGGATCTCAAGAGCATGC
TGACGTCATTTATGTGTTTCCATC
AGATACTGACAGAGATCATAAACA
TTTAACTCATTGATTATATGTTGA
GAGTTGTCCCTCAAGAACCAATGG
CCAAACATCCACTGAGGATACACG
GAAGCTTAGAAAATCTCTAATTAA
AATCCTGACATAATGGAAGTGCTC
ACAAACCAGCC<3'
(SEQ ID NO:2)
5'>GCCAACCTGTCCCTCTCTGAC
ATCTTGGTGTGTGTCATGTGCATC
CCTTTTACGGTCATCTACACTCTG
ATGGACCACTGGGTATTTGGGAAC
ACTATGTGTAAACTCACTTCCTAC
GTGCAAAGTGTCTCAGTTTCTGTG
TCCATATTCTCCCTTGTGTTGATT
GCTATTGAACGATATCAGCTGATT
GTGAACCCCCG<3'
(SEQ ID NO:3)

FIGURE 2B